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TO:

FINAL CLOSE-OUT REPORT

MCDERMOTT-HALL-BIRCH CREEK

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McDERMOTT-HALL-BIRCH CREEK
ABANDONED MINE RECLAMATION PROJECT

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FOR

DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU
HELENA, MONTANA

BY

DELTA ENGINEERING, P.C.
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GREAT FALLS, MONTANA

DECEMBER, 1987

I. INTRODUCTION

The McDermott-Hall-Birch Creek projects consist of three separate abandoned mine sites located in three different counties. All of the sites were former underground coal mining operations. The following is a brief description of each of the sites:

McDermott Site - The project site is located in Section 6, R2E, T36N in Toole County, Montana. The site contained several abandoned coal mines covering a total of 2-3 acres. The reclamation items included coal slack piles, collapsed adits, debris, concrete footings, and subsidence. The site is located at the foot of the Sweetgrass Hills on predominantly grass pasturelands. The landowner uses the mine site area as summer pasture for his livestock. There is no remaining historical record of the mining operation, but it was reported to have been worked until the early 1930's.

The objective of the reclamation was to restore the abandoned mine site back to a natural condition and to remove all mining disturbances. Elimination of health and safety hazards, such as subsidences, was the primary objective of the project.

Hall Site - The project site is located in Section 12, R8E, T33N in Blaine County, Montana. The site contained collapsed adits, slack piles and several dangerous subsidence holes covering a total of 1.0 acres. The major hazard at the site was the deep and dangerous subsidence features.

The site is located on semi-arid, native grasslands used primarily for cattle-grazing. There are no available records of the former mining activities for this site.

The main objective of the project was to eliminate all of the health and safety hazards including subsidences, collapsed adits, and exposed coal slack piles.

Birch Creek - The project site is located in Sections 28, 29, and 32 in T31N, R5W, Pondera County, Montana. The site contained 3 separate mine sites situated in the coulees and above Birch Creek. The sites included mine adits, subsidences, slack piles, concrete footings, and debris. The total area covered by the disturbances was approximately 1-1/2 acres.

The land use in the mine site area is mainly dryland grain farming. The mines are located in gullies that bisect the farm fields and drain to nearby Birch Creek.

The main problem at this site was the presence of open mine adits with the mine debris and slack a secondary consideration. The objective of the project was to permanently eliminate all mine openings and remove all visible evidence of the mining disturbances.

B. LIST OF EQUIPMENT USED ON THIS PROJECT

TYPE	MAKE & MODEL
Track Type Tractor	Fiat-Allis
Wheel Loader	Caterpillar 944-A
Track Type Tractor	Caterpillar D-6
End Dump Truck	MAC - 12 c.y.
Disc	Unknown
Drill	John-Deere

C. CONSTRUCTION METHODS USED ON THIS PROJECT

The Construction techniques and methods used on this project were similar to the methods used on previous reclamation projects of this type.

The slack piles on the sites were disposed of by either contouring in place or burying in waste pits. All available topsoil was salvaged from the disposal areas. Additional topsoil for the sites was either borrowed adjacent to the site or hauled a short distance with a truck.

Subsidence holes, adits, and openings were backfilled with compacted soil material or slack. All debris on the site was buried in waste pits and covered with a minimum of 2 feet of soil.

All of the coal waste areas were covered with topsoil at a rate of 6". All disturbed areas were seeded and fertilized using a John Deere double disc grass seeder. Hay mulch was applied at a rate of 2000 lb/acre and crimped in with a modified disc. Three-wire fence and gates were installed around all of the disturbed areas.

III. COST SUMMARY

ITEM	QUANTITY	ACTUAL UNIT PRICE OR ESTIMATED UNIT PRICE	TOTAL COST
McDermott Site			
Strip, stockpile, and replace soil	Lump sum	$1.30/cubic yard	$ 1,500.00
Contour slack	Lump sum	$0.37/cubic yard	550.00
Slack Removal	450 C.Y.	$2.00/cubic yard	900.00
Revegetation	3.0 Acre	$700.00/acre	2,100.00
3-Wire Fence	2846 L.F.	$0.90/Lineal foot	2,561.40
Topsoil	1624 C.Y.	$3.00/cubic yard	4,872.00
Debris Disposal	Lump sum	N/A	1,500.00
TOTAL			$ 13,983.40
Hall Site			
Adit backfill	2 each	$75.00/Each	150.00
Topsoil	430 C.Y.	$3.00/cubic yard	1,290.00
Contour slack	Lump sum	$1000.00/acre	400.00
3-Wire Fence	1935 L.F.	$0.90/lineal foot	1,741.50
Revegetation	1.0 Acre	$700.00/acre	700.00
Subsidence Backfill	Lump sum	N/A	500.00
TOTAL			$ 4,781.50
Birch Creek			
Slack Removal	Lump sum	$1.67/cubic yard	$ 2,000.00
Strip, stockpile, and replace soil	Lump sum	$1.50/cubic yard	1,100.00
3-Wire Fence	1870 L.F.	$0.90/lineal foot	1,683.00
Backfill adits	5 Each	$75.00/each	375.00
Revegetate	1.2 acre	$700.00/acre	840.00
Debris disposal	Lump sum	N/A	1,500.00
TOTAL			$ 7,498.00
		PROJECT TOTAL	$ 26,267.90

NOTE: Lump sum unit price estimates were derived from the engineer's estimate.

II. DESCRIPTION OF RECLAMATION CONTRACT

A. CONTRACT DATES AND DESCRIPTION

Bid Date	June 30, 1987
Lowest Bidders	
1. RENCO, Inc. Belt, Montana	Bid - $22,308.00
2. Gordon Construction Great Falls, MT	Bid - $28,732.00
3. Youderian Construction Stanford, MT	Bid - $33,980.70
Contract Award Date	July 6, 1987
Agreement Date	July 28, 1987
Notice to Proceed Date	August 3, 1987
Preconstruction Date	August 10, 1987
Work Startup Date	August 17, 1987
Completion Date	October 27, 1987
DSL Supervisor	Mike Hiel
Construction Supervision	Delta Engineering
Project Engineer	Rich West
Project Inspectors	Dwight Axelsen Jim Gold

IV. SUMMARY OF JOB

The McDermott-Hall-Birch Creek project accomplished all of the objective established for the project with no major deviations from the original reclamation plan. This particular project did not contain any unique or technical reclamation techniques as the sites were small.

The cost of the project was kept to a minimum by utilizing the topsoil available on or adjacent to the site. The fencing appears to be the major cost for these smaller sites, but that cost item appears to be unavoidable.

We did have some problems with landowner coordination/ communication at the Hall site. The main source of the problem was the failure of the Contractor to notify the landowner prior to starting construction. Perhaps the Contractor should be reminded at the pre-construction meeting and again before mobilizing that he is responsible for contacting the landowner before he moves onto the site.

There was some confusion over the fencing specification at the Hall site. Apparently the specifications were interpreted to allow guy wires instead of panels on some corners. The Contractor reimbursed the Department after they were informed that panels were indeed required. The fencing specification has since been modified to clarify the wording.

In summary, the project was successful in that it achieved all objectives of the project at a reasonable cost with no major problems.

ATTACHMENT I

ANALYSIS OF CONSULTANT COSTS

PROJECT NAME: McDermott - Hall - Birch Creek
PROJECT NO.: MONT A/E 87-46-102
DATE PREPARED: December, 1987

SERVICE	AMOUNT	
ENGINEERING DESIGN	$ 6422	
SUBTOTAL ENGINEERING DESIGN:		6,422
CONSTRUCTION INSPECTION AND ADMINISTRATION		
August	$12,035	
SUBTOTAL CONSTRUCTION INSP. & ADMIN.		12,035
TOTAL PROJECT ENGINEERING COST:		$18,457
TOTAL CONSTRUCTION COST:		$27,663

COST COMPARISON - PROJECT ENGINEERING/CONSTRUCTION

ENGINEERING DESIGN/CONSTRUCTION	23%
CONSTRUCTION INSP. & ADMIN./CONSTRUCTION	44%
TOTAL PROJECT ENGINEERING/CONSTRUCTION	67%